

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference P05264200	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2005/005765	International filing date ( <i>day/month/year</i> ) 28 March 2005 (28.03.2005)	Priority date ( <i>day/month/year</i> ) 30 March 2004 (30.03.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant COSMO OIL CO., LTD.			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report   |
| <input type="checkbox"/> Box No. II           | Priority  |
| <input type="checkbox"/> Box No. III          | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV           | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI           | Certain documents cited   |
| <input type="checkbox"/> Box No. VII          | Certain defects in the international application  |
| <input type="checkbox"/> Box No. VIII         | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

Date of issuance of this report  
19 October 2006 (19.10.2006)

Authorized officer

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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**TRANSLATION**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43b(is.1))

<p>To:</p>		<p>Date of mailing (day/month/year)</p>
<p>Applicant's or agent's file reference <b>P05264200</b></p>		<p><b>FOR FURTHER ACTION</b> See paragraph 2 below</p>
<p>International application No. <b>PCT/JP2005/005765</b></p>	<p>International filing date (day/month/year) <b>28.03.2005</b></p>	<p>Priority date (day/month/year) <b>30.03.2004</b></p>
<p>International Patent Classification (IPC) or both optional classification and IPC</p>		
<p>Applicant <b>COSMO OIL CO., LTD.</b></p>		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

<p>Name and mailing address of the ISA/JP</p>	<p>Authorized officer</p>
<p>Facsimile No.</p>	<p>Telephone No.</p>

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005765

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comment:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2005/005765

Box No. V	Reasoned statement under Rule 43bis.1(p)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	12-17	YES
	Claims	1-11, 18-21	NO
Inventive step (IS)	Claims		YES
	Claims	1-21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: WO 97/3042 A1 (Mitsubishi Chemical Corporation), 30 January 1997, claims, page 3, lines 17-25</p> <p>Document 2: JP 7-53311 A (Cosmo Research Institute), 28 February 1995, claims, Par. No. 0010</p> <p>Document 3: JP 8-151304 A (Cosmo Research Institute), 11 June 1996, claims, Par. No. 0013</p> <p>Document 4: JP 4-338305 A (Cosmo Research Institute), 25 November 1992, claims, Par. No. 0008</p> <p>Document 5: JP 2001-151614 A</p> <p>(The Board of Trustees of The University of Illinois), 05 June 2001, Table IV</p> <p>Document 6: JP 6-294797 A (NOKEG &amp; G Optoelectronics Kabushiki Kaisha)</p> <p>21 October 1994, Par. No. 0003</p> <p>Document 7: JP 5-310657 A (Mitsui Toatsu Chemicals, Inc.), 22 November 1993, claims</p> <p>Document 8: JP 60-139656 A (Ajinomoto Co., Inc.), 24 July 1985, claims</p> <p>(1) The inventions relating to claims 1-7 do not appear to be novel or to involve an inventive step based on documents 1-4 cited in the ISR.</p> <p>Documents 1-4 describe the nitrate salt of 5-aminolevulinic acid.</p> <p>(2) The inventions relating to claims 1, 8-11 do not appear to be novel or to involve an inventive step based on documents 1, 5 cited in the ISR.</p> <p>Document 1 describes the methanesulfonate salt and toluenesulfonate salt of 5-aminolevulinic acid.</p> <p>Document 5 describes the p-toluenesulfonate salt of 5-aminolevulinic acid.</p> <p>(3) The inventions relating to claims 12-17 do not appear to involve an inventive step based on documents 1, 5 cited in the ISR.</p> <p>Refer to (1) and (2) above.</p> <p>Moreover, document 6 describes separating and refining 5-aminolevulinic acid using an ion exchange resin. In addition, using ion exchange resins and using ammonium water as an eluting agent when refining compounds containing carboxyl and amino groups is publicly known, as described in documents 7-9. Therefore, in order to obtain the 5-aminolevulinic acid salts described in documents 1-5, separating and refining using ion exchange resins and blending with acids corresponding to these salts could be easily achieved by a party skilled in the art.</p>			

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of Box V

(4) The inventions relating to claims 18, 20 do not appear to be novel or to involve an inventive step based on document 1 cited in the ISR.

Refer to (1) and (2) above.

In addition, document 1 describes that 5-aminolevulinic acid salts are useful as a contrast medium for MRI.

(5) The inventions relating to claims 19, 21 do not appear to be novel or to involve an inventive step based on documents 2-5 cited in the ISR.

Refer to (1) and (2) above.

In addition, documents 2-5 describe that 5-aminolevulinic acid salts promote plant growth.